REMARKS

Restriction Requirement

Applicants acknowledge that the restriction requirement has been made final. Accordingly, nonelected claims 6-9, 17 and 18 have been canceled without prejudice. Applicants are submitting herewith a request under 37 C.F.R. § 1.48(b) to correct inventorship by deleting inventor Cheryl J. Campo, who is an inventor of claims 17 and 18 only.

Information Disclosure Statements

The Examiner has refused to consider information disclosure statements filed 3 May 2004 and 20 May 2005 (received 5 May 2004 and 23 May 2005), because each of these information disclosure statements included at least one reference that was not in the English language. 10/13/05 Office Action, page 3, third full paragraph. Applicants are submitting herewith an information disclosure statement in which each item listed on Form PTO-1449 is in the English language.

Provisional Obviousness-Type Double Patenting Over Application No. 10/958,435

Claims 1, 3, 10-14, and 16 stand provisionally rejected over claims 1-127 of copending Application No. 10/958,435 under the judicially created doctrine of obviousness-type double patenting. 10/13/05 Office Action, page 4, fifth full paragraph.

Applicants thank the Examiner for pointing out the potential obviousness-type double patenting issue between the claims of the present application and those of co-pending application No. 10/958,435. In view of the possibility that claims in the cited application or the present application will be amended before allowance, Applicants will defer responding to this provisional rejection until claims in the reference application are allowed, claims in the present application are otherwise allowable, and it is determined whether this provisional rejection becomes an actual rejection.

Provisional Obviousness-Type Double Patenting Over Application No. 10/683,314

Claims 1, 3, 10-14, and 16 stand provisionally rejected over claims 1-105 of copending Application No. 10/683,314 under the judicially created doctrine of obviousness-type double patenting. 10/13/05 Office Action, page 4, fifth full paragraph.

Applicants thank the Examiner for pointing out the potential obviousness-type double patenting issue between the claims of the present application and those of co-pending application No. 10/683,314. In view of the possibility that claims in the cited application or the present application will be amended before allowance, Applicants will defer responding to this provisional rejection until claims in the reference application are allowed, claims in the present application are otherwise allowable, and it is determined whether this provisional rejection becomes an actual rejection.

Claim Rejections Under 35 U.S.C. § 102(b) over Gergen

Claims 1, 3, 10-14, and 16 stand rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 4,080,357 to Gergen et al. (Gergen). Applicants respectfully traverse this rejection.

Gergen generally describes a multicomponent polymer blend composition prepared by intimately mixing a halogenated thermoplastic, a selectively hydrogenated monoalkenyl arene-diene block copolymer, and at least one dissimilar engineering thermoplastic resin under such conditions that at least two of the polymers form at least partial continuous network phases which interlock with the other polymer networks. Gergen abstract. The halogenated thermoplastic may be, inter alia, poly(vinylidene fluoride) homopolymer. Gergen, col. 6, lines 35-36.

Applicants' claim 1 is not anticipated by Gergen because Gergen does not teach Applicants' claim 1 "poly(vinyl acetate)." Anticipation requires that all of the elements of the claim be found within a single prior art reference. *Scripps Clinic & Research Foundation v. Genentech, Inc.*, 927 F.2d 1565, 1576 (Fed. Cir. 1991). Applicants' claim 1 recites "a blend of a crystalline polymer . . . with an amorphous polymer selected from the group consisting of poly(vinyl acetate), poly(methyl acrylate), poly(ethyl acrylate), atactic poly(methyl methacrylate), isotactic poly(methyl methacrylate) and syndiotactic poly(methyl methacrylate)." The Examiner states that "[t]he reference to Gergen et al (US 4,080,357) teaches the contemplated admixture of a crystalline poly(vinylidene fluoride) with poly(vinyl acetate), as claimed herein." Applicants agree that Gergen's compositions may comprise poly(vinylidene fluoride). *See, e.g.,* Gergen, col. 6, lines 35-36. However, Gergen does not teach the use of poly(vinyl acetate). Gergen's only teachings related to vinyl acetate monomer describe its use in the formation of copolymers with other monomers: copolymers with vinylidene chloride (col. 7, lines 11-20 and 25-34); blends of two or more vinylidene chloride polymers and ethylene-vinyl acetate copolymer (col. 7, lines 42-47); block copolymers of formaldehyde and vinyl acetate (col. 15, lines 19-25); copolymers of alpha,beta-olefinically unsaturated mononitriles and vinyl acetate (col. 17, lines 44-49, and col. 18, lines 32-47); and graft copolymers of acrylonitrile and vinyl acetate (col. 19, lines 21-26). Thus, Gergen does not teach the use of poly(vinyl acetate) as recited in Applicants' claim 1, and Gergen therefore cannot anticipate claim 1.

Furthermore, the morphology of Gergen's blends takes them outside the scope of Applicants' claim 1 shape memory polymer materials. Applicants' claim 1 specifies that the shape memory polymeric material's "rubber modulus and elasticity are derived substantially from physical crosslinks." These physical crosslinks are the result of entanglement between chains of the amorphous polymer in a continuous phase and chains of the crystalline polymer in a discrete phase. The elasticity exhibited by Applicants' claim 1 compositions at a temperature intermediate between the glass transition temperature, T_g, of the amorphous phase and the melting temperature, T_m, of the crystalline phase is associated with large elastic deformations of the continuous amorphous phase under stress, contrained from flow by the discrete crystalline phase, producing on the order of 100% elastic/recoverable strain. In contrast, in Gergen's blends, "at least two of the polymers form at least partial continuous network phases which interlock". Gergen abstract; see also col. 21, lines 11-14 ("it is an essential aspect of the present invention that the various polymers can be blended in such a way to form co-continuous interlocking networks") (emphasis added). In a co-continuous amorphous/crystalline blend such as Gergen's, the elasticity of the material at a temperature intermediate between T_g of the amorphous phase and T_m of the crystalline phase is excessively limited (<10% elastic/recoverable strain) by the stiffness of the co-continuous crystalline phase. Gergen's blends thus lack the crystalline physical crosslinks within a continuous amorphous phase and the crosslink-bridging amorphous chains that provide the elasticity necessary for Applicants' claim 1 to function as shape memory polymer materials. In other words, Gergen's blends are morphologically, as well as chemically, distinct from Applicants' claim 1 shape memory polymer materials.

For all of the above reasons, Applicants' claim 1 is not anticipated by Gergen. Given that claims 3, 10-14, and 16 each include or further limit all the limitations of claim 1, Applicants respectfully request the reconsideration and withdrawal of the rejection of claims 1, 3, 10-14, and 16 under 35 U.S.C. § 102(b) over Gergen.

It is believed that the foregoing amendments and remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicants. Accordingly, reconsideration and allowance is requested.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 06-1130 maintained by Applicants' Attorneys.

Respectfully submitted,

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